



STF2907A

SMALL SIGNAL PNP TRANSISTOR

PRELIMINARY DATA

Type	Marking
STF2907A	03F

- SILICON EPITAXIAL PLANAR PNP TRANSISTOR
- MINIATURE SOT-89 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE & REEL PACKING
- THE NPN COMPLEMENTARY TYPE IS STF2222A

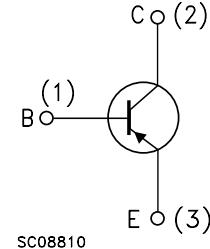
APPLICATIONS

- WELL SUITABLE FOR PORTABLE EQUIPMENT
- SMALL LOAD SWITCH TRANSISTOR WITH HIGH GAIN AND LOW SATURATION VOLTAGE



SOT-89

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Emitter Voltage ($I_E = 0$)	-60	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	-60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	-5	V
I_C	Collector Current	-0.6	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	-0.8	A
P_{tot}	Total Dissipation at $T_C = 25$ °C	1.2	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

THERMAL DATA

$R_{thj-amb}$ •	Thermal Resistance Junction-Ambient	Max	104.1	$^{\circ}\text{C/W}$
• Device mounted on a PCB area of 1 cm^2				

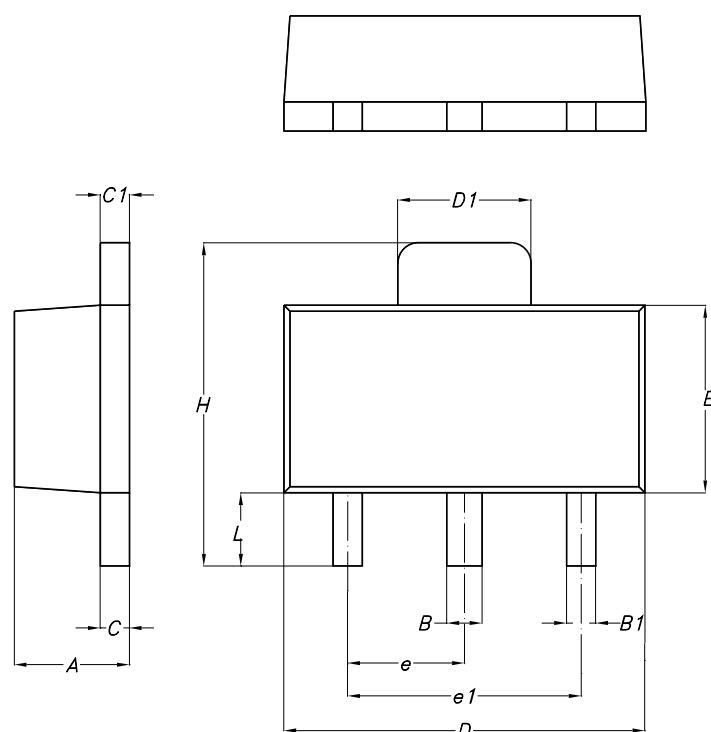
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current ($V_{BE} = -3\text{ V}$)	$V_{CE} = -30\text{ V}$			-50	nA
I_{BEX}	Base Cut-off Current ($V_{BE} = -3\text{ V}$)	$V_{CE} = -30\text{ V}$			-50	nA
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = -50\text{ V}$			-10	nA
$V_{(BR)CEO}^*$	Collector-Emitter Breakdown Voltage ($I_B = 0$)	$I_C = -10\text{ mA}$	-60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_E = 0$)	$I_C = -10\text{ }\mu\text{A}$	-60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_C = 0$)	$I_E = -10\text{ }\mu\text{A}$	-5			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = -150\text{ mA} \quad I_B = -15\text{ mA}$ $I_C = -500\text{ mA} \quad I_B = -50\text{ mA}$			-0.4 -1.6	V V
$V_{BE(sat)}^*$	Collector-Base Saturation Voltage	$I_C = -150\text{ mA} \quad I_B = -15\text{ mA}$ $I_C = -500\text{ mA} \quad I_B = -50\text{ mA}$			-1.3 -2.6	V V
h_{FE}^*	DC Current Gain	$I_C = -0.1\text{ mA} \quad V_{CE} = -10\text{ V}$ $I_C = -1\text{ mA} \quad V_{CE} = -10\text{ V}$ $I_C = -10\text{ mA} \quad V_{CE} = -10\text{ V}$ $I_C = -150\text{ mA} \quad V_{CE} = -10\text{ V}$ $I_C = -500\text{ mA} \quad V_{CE} = -10\text{ V}$	75 100 100 100 50		300	
f_T	Transition Frequency	$I_C = -50\text{ mA} \quad V_{CE} = -20\text{ V} \quad f = 100\text{MHz}$	200			MHz
C_{CBO}	Collector-Base Capacitance	$I_E = 0 \quad V_{CB} = -10\text{ V} \quad f = 1\text{ MHz}$			8	pF
C_{EBO}	Emitter-Base Capacitance	$I_C = 0 \quad V_{EB} = -2\text{ V} \quad f = 1\text{ MHz}$			30	pF
t_d	Delay Time	$I_C = -150\text{ mA} \quad I_B = -15\text{ mA}$ $V_{CC} = -30\text{V}$			10	ns
t_r	Rise Time				40	ns
t_{on}	Switching On Time				45	ns
t_s	Storage Time	$I_C = -150\text{ mA} \quad I_{B1} = -I_{B2} = -15\text{mA}$ $V_{CC} = -30\text{V}$		190		ns
t_f	Fall Time				30	ns
t_{off}	Switching Off Time			220		ns

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$

SOT-89 MECHANICAL DATA

DIM.	mm			mils		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	1.4		1.6	55.1		63.0
B	0.44		0.56	17.3		22.0
B1	0.36		0.48	14.2		18.9
C	0.35		0.44	13.8		17.3
C1	0.35		0.44	13.8		17.3
D	4.4		4.6	173.2		181.1
D1	1.62		1.83	63.8		72.0
E	2.29		2.6	90.2		102.4
e	1.42		1.57	55.9		61.8
e1	2.92		3.07	115.0		120.9
H	3.94		4.25	155.1		167.3
L	0.89		1.2	35.0		47.2



P025H

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2003 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco -
Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>